Welcome to the Department of Biochemistry and Molecular Biophysics

Washington University in St. Louis
School of Medicine

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2) Click Media and Newsletters

3) Click Display TV Announcements
Elizabeth Haswell, Ph.D.
Washington University in Saint Louis

“Mechanopereception in the Green Lineage”

Tuesday, September 22nd, 2020
10:30 am

Host: John Cooper

(Contact Melissa Torres for a Zoom invite.)
For the latest updates on coronavirus (COVID-19), please visit here:
coronavirus.wustl.edu

Don’t forget to self-screen before coming into work!
screening.wustl.edu
Neutralizing Antibody and Soluble ACE2 Inhibition of a Replication-Competent VSV-SARS-CoV-2 and a Clinical Isolate of SARS-CoV-2

Congratulations to Jhullian Alston and Jasmine Cubuk for being selected for the 2020 MilliporeSigma Fellowship

Jhullian Alston (JJ) is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. He is completing his Ph.D. thesis work jointly between the labs of Dr. Andrea Soranno and Dr. Alex Holehouse.

Jasmine is a fourth-year graduate student in the Biochemistry, Biophysics, and Structural Biology (BBSB) program. She is doing her PhD thesis work in the lab of Dr. Andrea Soranno.

Visit biochem.wustl.edu/news to read more!
Congratulations to Dr. Zhang

July 10th, 2020 – **Rui Zhang, PhD**, assistant professor of biochemistry and molecular biophysics received a new five year grant award from the National Institute of General Medical Sciences for his research entitled “Structural and functional studies of axonemal microtubule inner proteins (MIPs)”. 
The **Niemi Lab** investigates how mitochondria are built, regulated, and maintained across physiological contexts. We blend biochemistry, systems biology, and physiology to understand mechanisms of mitochondrial regulation and how they influence metabolism and organellar function. Using insights gained from our molecular studies, we aim to understand how mitochondrial dysfunction contributes to mammalian pathophysiology, with the long-term goal of translating our discoveries into new therapeutic options to restore mitochondrial function in human disease.

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

*Citizen Scientists Create an Exascale Computer to Combat COVID-19*

bioRxiv. 2020.06.27.175430. doi: 10.1101/2020.06.27.175430. (2020)
Computer not working?
Not getting email on your smartphone?

We are here to help with the many computing issues that may pop up in your day-to-day operations.

Support email: support@biochem.wustl.edu

Support website: BMBSupport.wustl.edu

Just send us an email or visit our website and click on *Request Support* to get help!
The Cooper Lab is interested in how the actin filaments in cells assemble and how that assembly controls cell shape and movement. One focus is an actin-binding protein called "capping protein," which caps one end of the actin filament. Capping protein is in turn regulated by intrinsically disordered regions of the CARMIL family of proteins, which exhibit positive linkage in their binding interactions.

See more research: biochem.wustl.edu/spotlight
Are you paid **monthly**?

Please remember that your **time report** is **due by the 5th of each month**.
Are your files backed up?

If you are not keeping your files on a network file server, running a local backup client, or utilizing cloud storage, then it is possible that your files are not backed up!

Want to make sure your data is backed up? We provide several backup solutions.

BMBSupport.wustl.edu/backups
Research in the **Lohman Lab** focuses on obtaining a molecular understanding of the mechanisms of protein-nucleic acid interactions involved in DNA metabolism, in particular, DNA motor proteins (helicases/translocases) and single stranded DNA binding proteins. Thermodynamic, kinetic, structural and single molecule approaches are used to probe these interactions at the molecular level.

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)

Development of a Single-Stranded DNA-binding Protein Fluorescent Fusion Toolbox

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screening.wustl.edu
Rachel Bezalel-Buch, Young K. Cheun, Upasana Roy, Orlando D. Schärer, & Peter M. Burgers

Bypass of DNA interstrand crosslinks by a Rev1-DNA polymerase ζ complex

August 21st, 2020 – **Carl Frieden, PhD**, Professor of Biochemistry and Molecular Biophysics, received a new one year grant award from BrightFocus Foundation for his research entitled “Understanding apoE”.

**Congratulations to Dr. Frieden**
The **Burgers Lab** studies DNA replication and DNA damage response in eukaryotic cells. Using yeast as a model organism, the lab integrates the biochemical analysis of DNA-protein interactions in purified model systems with the genetic analysis of targeted yeast mutants. Specific areas of interest are lagging strand DNA replication and Okazaki fragment maturation, damage induced mutagenesis, and DNA damage cell cycle checkpoints.

Right: DNA replication fork and Okazaki fragment maturation

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)
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Washington University in Saint Louis

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HAVING ISSUES AT WORK?
WE’RE HERE TO HELP.

Contact any of the following for help

Jayma Mikes, Business Manager, jmikes@wustl.edu, 314-362-0262
John Cooper, Department Head, jcooper11@gmail.com, 314-362-3964
Jessica Kennedy – Title IX Director, jwkennedy@wustl.edu, 314-935-3118
Jessica Kuchta-Miller – Staff/Postdoc/Graduate Student Ombuds, 314-379-8110
Karen O’Malley – Medical Student Ombuds, 314-660-2089
Jim Fehr – Faculty Ombuds, 314-660-2089
Dr. Bowman Featured in The Source

June 25th, 2020 - The work by Dr. Greg Bowman on the Folding@home project and COVID-19 research was recently featured in The Source.

You can visit biochem.wustl.edu/news for a link to the article!
The Bowman Lab seeks to understand the distribution of different structures a protein adopts and how this ensemble determines a protein’s function. Examples of ongoing research projects include 1) understanding how mutations in the enzyme beta-lactamase change its specificity without changing the protein’s crystal structure, 2) designing allosteric drugs, and 3) developing algorithms for quickly building models of the different structures a protein adopts.

See more research: biochem.wustl.edu/spotlight
Your **BMB ID** is used for network files shares, remote VPN access, and BMB WiFi.

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[bmbid.wustl.edu](http://bmbid.wustl.edu)
Shuang Li, Shixuan Liu, Yihu Yang, & Weikai Li

Characterization of Warfarin Inhibition Kinetics Requires Stabilization of Intramembrane Vitamin K Epoxide Reductases

The **Galburt Lab** strives to understand the physical mechanisms of transcription initiation and other important DNA-protein interactions. More specifically, we use a variety of single-molecule and ensemble biophysical techniques including both optical and magnetic tweezers and fluorescent microscopy to investigate how the assembly of initiation complexes on gene promoters leads to DNA unwinding and transcription. Our work is currently focused on the mechanisms of basal transcription initiation in Eukaryotes and on factor-regulated transcription in Mycobacterium tuberculosis.

See more research: [biochem.wustl.edu/spotlight](http://biochem.wustl.edu/spotlight)
James W Janetka, Allen T Hopper, Ziping Yang, Jennifer Barks, Mary Savari Dhason, Qiuling Wang, & L David Sibley

Optimizing Pyrazolopyrimidine Inhibitors of Calcium Dependent Protein Kinase 1 for Treatment of Acute and Chronic Toxoplasmosis

J Med Chem. doi: 10.1021/acs.jmedchem.0c00419. (2020)
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BMB SCIENCE FRIDAYS

a forum for new data, new ideas
and works in progress

Science Fridays and Happy Hour:
EVERY FRIDAY, starting at 4PM.

Department of Biochemistry and Molecular Biophysics
Washington University in St. Louis • School of Medicine
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<tr>
<th>Holiday</th>
<th>Day</th>
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<tbody>
<tr>
<td>Independence Day</td>
<td>Friday</td>
<td>July 3(^{rd}), 2020</td>
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<tr>
<td>Labor Day</td>
<td>Monday</td>
<td>September 7(^{th}), 2020</td>
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<td>Christmas Eve</td>
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<td>December 25(^{th}), 2020</td>
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Yihu Yang, Xiaoran Roger Liu, Zev J. Greenberg, Fengbo Zhou, Peng He, Lingling Fan, Shixuan Liu, Guomin Shen, Takeshi Egawa, Michael L. Gross, Laura G. Schuettpelz, & Weikai Li

Open conformation of tetraspanins shapes interaction partner networks on cell membranes

The Greenberg Lab focuses on how cytoskeletal motors function in both health and disease. Currently, the lab is studying mutations that cause familial cardiomyopathies, the leading cause of sudden cardiac death in people under 30 years old. The lab uses an array of biochemical, biophysical, and cell biological techniques to decipher how these mutations affect heart contraction from the level of single molecules to the level of engineered tissues. Insights into the disease pathogenesis will guide efforts to develop novel therapies.

See more research: biochem.wustl.edu/spotlight
Don't Forget!

Please keep your lab locked if no one is in there when you leave.

Don’t forget your keys!

Please remember to take OFF your gloves when leaving the lab.

Department of Biochemistry and Molecular Biophysics
Washington University in St. Louis • School of Medicine
Justin R Porter, Artur Meller, Maxwell I Zimmerman, Michael J Greenberg, & Gregory R Bowman

Conformational Distributions of Isolated Myosin Motor Domains Encode Their Mechanochemical Properties